TÉCNICO LISBOA

CENTEC

5th International Conference on Renewable Energies Offshore

RENEW 2022

PROGRAMME

8 - 10 November 2022

IST Congress Centre
LISBON, PORTUGAL

ORGANISATION

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Carlos Guedes Soares, IST, Universidade de Lisboa, Portugal

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- John D. Sørensen, Aalborg University, Denmark
- John Ringwood, Maynooth University, Ireland
- Jonas Ringsberg, Chalmers Univ. Technology, Sweden
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SCHEDULE AT A GLANCE

Tuesday, 8 November 2022 **Registration** (Hall 01 – from 8h00 onwards)		
Instituto Superior Técnico – Congress Centre		
Opening Session – *Auditorium (09h00-09h30)* ***President of IST*** *and* ***C. Guedes Soares***		
Plenary Lectures – *Auditorium (09h30-11h00)* *Chairman: C. Guedes Soares*		
Coffee-break (11h00 – 11h30)		
Auditorium	*Room 02.2*	*Room 02.3*
Session 1.1 (11h30-13h00) **Wave Energy 1**	*Session 2.1 (11h30-13h00)* **Wind Energy 1**	*Session 3.1 (11h30-13h00)* **Resource Assessment 1**
Lunch (13h00-14h30)		
Room 02.1	*Room 02.2*	*Room 02.3*
Session 1.2 (14h30-16h00) **Wave Energy 2**	*Session 2.2 (14h30-16h00)* **Wind Energy 2**	*Session 3.2 (14h30-16h00)* **Resource Assessment 2**
Coffee-break (16h00-16h30)		
Session 1.3 (16h30-18h00) **Wave Energy 3**	*Session 2.3 (16h30-18h00)* **Wind Energy 3**	*Session 3.3 (16h30-18h00)* **Resource Assessment 3**
18h00 - Welcome Reception		
Wednesday, 9 November 2022 **Registration** *(Hall 01 – from 8h00 onwards)*		
Room 02.1	*Room 02.2*	*Room 02.3*
Session 1.4 (09h00-10h30) **Wave Energy – OWC**	*Session 2.4 (09h00-10h30)* **Wind Energy 4**	*Session 3.4 (09h00-10h30)* **Tidal Energy 1**
Coffee-break (10h30-11h00)		
Session 1.5 (11h00-12h30) **Wave Energy – Farms**	*Session 2.5 (11h00-12h30)* **Wind Energy – Hydrodynamics**	*Session 3.5 (11h00-12h30)* **Tidal Energy 2**
Lunch (12h30-14h00)		
Session 1.6 (14h00-15h30) **Wave Energy – Control**	*Session 2.6 (14h00-15h30)* **Wind Energy – Construction**	*Session 3.6 (14h00-15h30)* **Tidal Energy 3**
Coffee-break (15h30-16h00)		
Session 1.7 (16h00-17h30) **Wave Energy – Hydrodynamics**	*Session 2.7 (16h00-17h30)* **Wind Energy – Farms**	*Session 3.7 (16h00-17h30)* **Solar Energy**
20h00 - Conference Dinner		
Thursday, 10 November 2022 **Registration** *(Hall 01 – from 8h00 onwards)*		
Room 02.1	*Room 02.2*	*Room 02.3*
Session 1.8 (09h00-10h30) **Renewable Energy Devices 1**	*Session 2.8 (09h00-10h30)* **ArcWIND 1**	*Session 3.8 (09h00-10h30)* **Materials and Structural Design 1**
Coffee-break (10h30-11h00)		
Session 1.9 (11h00-12h30) **Renewable Energy Devices 2**	*Session 2.9 (11h00-12h30)* **ArcWIND 2**	*Session 3.9 (11h00-12h30)* **Materials and Structural Design 2**
Lunch (12h30-14h00)		
Session 1.10 (14h00-15h30) **Multiuse Platforms**	*Session 2.10 (14h00-15h30)* **ArcWIND 3**	*Session 3.10 (14h00-15h30)* **Maintenance Planning**
15h30 - Farewell Reception		
End of the RENEW 2022 Conference		

SESSIONS IN ALPHABETICAL ORDER

ArcWIND 1 - Thursday, 10/11/2022, Session 2.8, 09h00-10h30, Room: 02.2

ArcWIND 2 - Thursday, 10/11/2022, Session 2.9, 11h00-12h30, Room: 02.2

ArcWIND 3 - Thursday, 10/11/2022, Session 2.10, 14h00-15h30, Room: 02.2

Maintenance Planning - Thursday, 10/11/2022, Session 3.10, 14h00-15h30, Room: 02.3

Materials and Structural Design 1 - Thursday, 10/11/2022, Session 3.8, 09h00-10h30, Room: 02.3

Materials and Structural Design 2 - Thursday, 10/11/2022, Session 3.9, 11h00-12h30, Room: 02.3

Multiuse Platforms - Thursday, 10/11/2022, Session 1.10, 14h00-15h30, Room: 02.1

Opening Session - Tuesday, 08/11/2022, 09h00-09h30, Auditorium

Plenary Lectures - Tuesday, 08/11/2022, 09h30-11h00, Auditorium

Renewable Energy Devices 1 - Thursday, 10/11/2022, Session 1.8, 09h00-10h30, Room: 02.1

Renewable Energy Devices 2 - Thursday, 10/11/2022, Session 1.9, 11h00-12h30, Room: 02.1

Resource Assessment 1 - Tuesday, 08/11/2022, Session 3.1, 11h30-13h00, Room: 02.3

Resource Assessment 2 - Tuesday, 08/11/2022, Session 3.2, 14h30-16h00, Room: 02.3

Resource Assessment 3 - Tuesday, 08/11/2022, Session 3.3, 16h30-18h00, Room: 02.3

Solar Energy - Wednesday, 09/11/2022, Session 3.7, 16h00-17h30, Room: 02.3

Tidal Energy 1 - Wednesday, 09/11/2022, Session 3.4, 09h00-10h30, Room: 02.3

Tidal Energy 2 - Wednesday, 09/11/2022, Session 3.5, 11h00-12h30, Room: 02.3

Tidal Energy 3 - Wednesday, 09/11/2022, Session 3.6, 14h00-15h30, Room: 02.3

Wave Energy 1 - Tuesday, 08/11/2022, Session 1.1, 11h30-13h00, Auditorium

Wave Energy 2 - Tuesday, 08/11/2022, Session 1.2, 14h30-16h00, Room: 02.1

Wave Energy 3 - Tuesday, 08/11/2022, Session 1.3, 16h30-18h00, Room: 02.1

Wave Energy - Control - Wednesday, 09/11/2022, Session 1.6, 14h00-15h30, Room: 02.1

Wave Energy - Farms - Wednesday, 09/11/2022, Session 1.5, 11h00-12h30, Room: 02.1

Wave Energy - Hydrodynamics - Wednesday, 09/11/2022, Session 1.7, 16h00-17h30, Room: 02.1

Wave Energy - OWC - Wednesday, 09/11/2022, Session 1.4, 09h00-10h30, Room: 02.1

Wind Energy 1 - Tuesday, 08/11/2022, Session 2.1, 11h30-13h00, Room: 02.2

Wind Energy 2 - Tuesday, 08/11/2022, Session 2.2, 14h30-16h00, Room: 02.2

Wind Energy 3 - Tuesday, 08/11/2022, Session 2.3, 16h30-18h00, Room: 02.2

Wind Energy 4 - Wednesday, 09/11/2022, Session 2.4, 09h00-10h30, Room: 02.2

Wind Energy - Construction - Wednesday, 09/11/2022, Session 2.6, 14h00-15h30, Room: 02.2

Wind Energy - Farms - Wednesday, 09/11/2022, Session 2.7, 16h00-17h30, Room: 02.2

Wind Energy - Hydrodynamics - Wednesday, 09/11/2022, Session 2.5, 11h00-12h30, Room: 02.2

DETAILED PROGRAMME

Tuesday, 8 November 2022

09h00 to 09h30

Opening Session
Auditorium

Presided by:
Rogério Colaço, President of IST
and C. Guedes Soares

Opening Addresses

09h30 - 11h00

Plenary Lectures
Auditorium

Chaired by: C. Guedes Soares

Overview of the advances and validations of offshore wind design tools
Amy Robertson, NREL, Golden, CO, USA

Floating offshore wind proved by the WindFloat® Technology
Cyril Godreau, Principal Power, Lisbon, Portugal

Certification of Offshore Wind Turbines
Pilar Heras, DNV, Denmark

11h30 to 13h00

Session 1.1
Wave Energy 1
Auditorium

Chairs: P. Stansby & L. Cappietti

Load assessment of optimally-arranged point absorbers arrays in front of a vertical wall
E. Loukogeorgaki, C. Michailides, G. Lavidas, S. Saeidtehrani & I.K. Chatjigeorgiou

Mono-objective optimisation of floating wave energy converter profile in front of vertical seawall
P. Tournant, G. Perret, F. Marin, H. Smaoui & P. Sergent

A comparison of the performance and characteristics of two generations Waves4Power WaveEL wave energy converters
X. Shao, H.-D. Yao, J.W. Ringsberg, Z. Li, E. Johnson & G. Fredrikson

Comparison of the full dynamic simulation and wave basin test of a multi-float WEC
C. Zhao, L. Johanning, G. Li & P. Stansby

11h30 to 13h00

Session 2.1
Wind Energy 1
Room 02.2

Chairs: F. Adam & V. Nava

Monopile run-up study using Eulerian and Lagrangian numerical models
I. Herdayanditya, P. Rauwoens, G. Verao Fernandez, I. Martínez-Estévez & E. Lataire

Wave run-up characterisation for a scale model semi-submersible floating WTG platform
T. Foster, L. Johanning, M. Borg, P. Hyldahl, V. Venugopal & L. Tao

Bayesian neural networks for the probabilistic forecasting of wind direction and speed using ocean data
M.C.A. Clare & M.D. Piggott

Real-time wave prediction for floating offshore wind turbine based on the Kalman filter
R. Isnaini, K. Toichi, T. Akira & K. Iijima

11h30 to 13h00
Session 3.1
Resource Assessment 1
Room 02.3
Chairs: T. Soukissian & M. Bernardino

Wave energy converters technology database for a web-based platform for evaluating wave energy resource and productivity potential
G. Giorgi, R. Novo, G. Cervelli & G. Bracco

Impacts of physical calibration of a spectral wave model and effects of using different temporal wind inputs
G. Lavidas & V. Venugopal

Wave energy assessment in the Mediterranean Sea
A. Tsaousi, M. Sotiriou & T.H. Soukissian

Monthly distribution of wind and wave energy resources in Canary Islands
G. Clarindo, C. Guedes Soares & G. Rodríguez

14h30 to 16h00
Session 1.2
Wave Energy 2
Room: 02.1
Chairs: J.W. Ringsberg & J. Gaspar

Wave basin testing of optimal PTO control of 6-float M4 WEC
Z. Liao, T. Sun, P. Stansby, G. Li, M. Al-ani & M. Belmont

Numerical and experimental assessment of the hydrodynamic behaviour of an attenuator wave energy converter device
P. Matamala, Á. Gallardo, C. Parra, J.M. Ahumada, C. Cifuentes, F. González & G. Tampier

Numerical modelling and optimization of a wave energy hyperbaric converter on the south-western Portugal coast
F. Bernardo, M. Brito, J. Lopes, L. Gil, A.J.C. Crespo, J.M. Domínguez & D. Neves

Performance investigation of sail wing turbine for wave energy conversion in a reciprocating airflow
H. Iitsuka, M. Takao, S. Okuhara, H. Taniguchi, S. Matsuura & M.M.A. Alam

14h30 to 16h00
Session 2.2
Wind Energy 2
Room 02.2
Chairs: L. Johanning & S. Wang

Numerical investigation of a submerged gravity anchor under wave loading during the lowering process
V.K. Vanjakula, F. Adam, C. Windt & N. Goseberg

Experimental analysis of a free-float capable tension leg platform with a 10 MW turbine
M. Hmedi, E. Uzunoglu, C. Guedes Soares, A. Medina-Manuel, J. Mas-Soler, V. Abad-Gibert, A. Souto-Iglesias, F. Vittori, O. Pires & J. Azcona

An optimal design of the Hexafloat floating platform for offshore wind turbines
E. Faraggiana, M. Sirigu, A. Ghigo, G. Bracco & G. Mattiazzo

Time domain analysis of the WIND-bos SPAR in regular waves
T.S. Hallak, C. Guedes Soares, O. Sainz, S. Hernández & A. Arévalo

14h30 to 16h00
Session 3.2
Resource Assessment 2
Room 02.3
Chairs: T. Soukissian & G. Lavidas

Wave energy and the European transmission system
F. Delgado, G. Lavidas & K. Blok

Extreme wave contours for floating wind turbine sites in the Atlantic area
G. Clarindo & C. Guedes Soares

Climate change impacts on the wave energy in the Azores Islands
M. Gonçalves, C. Bernardo, M. Bernardino & C. Guedes Soares

Selecting representative tide conditions for tidal range and energy assessments
K. Pappas, A. Angeloudis, L. Mackie & I. Zilakos

16h30 – 18h00
Session 1.3
Wave Energy 3
Room: 02.1
Chairs: E. Loukogeorgaki & S. Mohapatra

Low voltage ride-through capability enhancement of a grid-connected wave energy conversion system
H.A. Said & J.V. Ringwood

Flap-type wave energy converters: From accelerated testing to fault detection
S. Saeidtehrani, A. Cabboi, G. Lavidas & A. Metrikine

Analytical and experimental study on wave interaction with a horizontal floating flexible membrane supported by linear springs
S.C. Mohapatra, Y.C. Guo & C. Guedes Soares

Experiments on overtopping flow rate for wave power generators with polygonal slopes
M. Minami, A. Orikasa & K. Kamiharako

16h30 – 18h00
Session 2.3
Wind Energy 3
Room: 02.2
Chairs: A. Souto-Iglesias & E. Uzunoglu

Coupling of aero-elastic and structural codes to carry out integrated load analysis of floating wind turbines
G.K.V. Ramachandran, L. Sahlberg-Nielsen, A. Acampora, H. Jia & C. Brown

Effect of geometry modifications on the dynamics of a free-float capable tension leg platform
M. Hmedi, E. Uzunoglu & C. Guedes Soares

Passive motion reduction of semisubmersible floating offshore wind turbine foundations
I.P. Johannesen, E. Ransley, M. Hann, S. Cheng & D. Greaves

Numerical study of the wave induced motions and loads on the CENTEC-TLP floating wind turbine
E. Zavvar, H.S. Abdelwahab, E. Uzunoglu, B.Q. Chen & C. Guedes Soares

16h30 – 18h00
Session 3.3
Resource Assessment 3
Room 02.3
Chairs: G. Lavidas & M. Bernardino

Metocean conditions at the Ifremer in situ test site in Brest
M. Träsch, N. Raillard, V. Perier, M. Le Boulluec, M. Répécaud & C. Matoug

Advanced methods of identification of sea-breeze and low-level jet events from near ground measurements with specific implication for energy production by offshore wind farms
S. Roy, A. Sentchev, P. Augustin & M. Fourmentin

A control-oriented wind turbine dynamic simulation framework which resolves local atmospheric conditions
Z. Feng, R. Ferrari, J.W. van Wingerden & Y. Liu

Impact of the turbulent wake downstream offshore wind turbines on larval dispersal
S. Ajmi, M. Boutet, A.C. Bennis, J.P. Pezy & J.C. Dauvin

Wednesday, 9 November 2022

09h00 – 10h30
Session 1.4
Wave Energy - OWC
Room: 02.1
Chairs: F. Arena & S. Saeidtehrani

A comprehensive wave-to-wire control formulation for oscillating water column wave energy converters
M. Rosati, J.V. Ringwood & J.C.C. Henriques

Pneumatic performance improvement of an onshore dual chamber OWC using a CFD model
J. Gadelho & C. Guedes Soares

A data-based modelling approach for a vented oscillating water column wave energy converter
M. Rosati, J.V. Ringwood, H.B. Bingham, B. Joensen & K. Nielsen

Nonlinear hydrodynamic modelling for floating wave energy converters: A code-to-code comparison
M. Penalba, A. Zarketa, G. Giorgi & Y. Peña-Sanchez

09h00 – 10h30
Session 2.4
Wind Energy 4
Room: 02.2
Chairs: V. Nava & E. Uzunoglu

Personnel-transfer from vessel to offshore floating wind turbine
O.T. Gudmestad & S. Viddal

From PID control to fuzzy control through evolutive optimization techniques in floating offshore wind turbines
C. Hernández-Hernández, J. Sierra-García & M. Santos

A study based on an active ballast control system with which to improve the behavior of a winfloat-type platform
L. del Horno, J.A. Somolinos, R. Morales & E. Segura

Optimal configuration of the hybrid electric system in Porto Santo Island
S. Ramos, D. Silva & C. Guedes Soares

09h00 – 10h30
Session 3.4
Tidal Energy 1
Room: 02.3
Chairs: L. Chatellier & I. Masters

Experiments in the ocean: Development of a small-scale sea trial tidal turbine test rig
I. Evans, D. Glasby, T. Lake, M. Togneri & I. Masters

Comparison of the experimental response of two horizontal axis tidal turbines to wave and current from a frequency dependency point of view
M.-A. Dufour, G. Pinon, B. Gaurier, G. Germain, J.-V. Facq, M. Togneri, F. Represas, E. Nicolas & J. Marcille

Tidal and wind turbine simulation with the simulation code DOROTHY
C. Choma Bex, M.-A. Dufour, Y. Ben Belkacem, G. Pinon, G. Germain & E. Rivoalen

A new blade element momentum method for tandem counter-rotating marine current turbines
C. Zeng & C. Guedes Soares

11h00 – 12h30

Session 1.5

Wave Energy - Farms

Room: 02.1

Chairs: J.W. Ringsberg & E. Loukogeorgaki

Multi-fidelity modelling of wave energy converter farms
B. Battisti, G. Bracco & M. Bergmann

Hydrodynamic analysis of WEC array in variable bathymetry regions by a simplified mild-slope model
K. Belibassakis, M. Bonovas & A. Magkouris

Nonlinear harmonic balance modelling for wave energy converter array layout assessment
D. García-Violini, Y. Peña-Sanchez, A. Zarketa, M. Penalba, N. Faedo & J.V. Ringwood

Hydrodynamic analysis of OWC array in multi-directional waves
J. Geng, Z. Wang, X.L. Zhao & Q.P. Zou

11h00 – 12h30

Session 2.5

Wind Energy - Hydrodynamics

Room: 02.2

Chairs: H. Bihs & S. Wang

Numerical simulation and comparison with experiments of a floating wind turbine using a direct forcing method
P.A. Berthelsen, M. Thys, A. Kamath, T. Martin & H. Bihs

On the use of constrained focused waves for characteristic load prediction
T. Tosdevin, S. Jin, D. Simmonds, M. Hann & D. Greaves

Validation of a computationally efficient time-domain numerical tool against DeepCwind experimental data
A.B.K. Pribadi, L. Donatini, E. Lataire, G.V. Fernandez & I. Martínez-Estévez

Performance of the open-source potential flow solver HAMS in estimating the hydrodynamic properties of a floating wind turbine
E. Uzunoglu, Y. Liu & C. Guedes Soares

11h00 – 12h30

Session 3.5

Tidal Energy 2

Room: 02.3

Chairs: I. Masters & L. Chatellier

Experimental study of Darrieus turbines in confined free-surface flows
M.L. Kara Mostefa, L. Chatellier & L. Thomas

Performance improvement of vertical axis-autorotation current turbine through twin rotors
R.B. Soares, A.C. Fernandes & J.S. Sales Junior

Experimental study of two opposed flow directions effect on a ducted twin vertical axis tidal turbine
M. Moreau, C. Derveaux, G. Maurice, J.-V. Facq & G. Germain

Stability analysis of fluttering to autorotation to flat plate turbine
R.B. Soares, A.C. Fernandes & J.S. Sales Junior

14h00 – 15h30

Session 1.6

Wave Energy - Control

Room: 02.1

Chairs: M. Mendes & C. Zeng

Passive damping control in wave farms using cluster communication
M. Göteman

Towards hydrodynamic control of an oscillating water column wave energy converter
M. Rosati & J.V. Ringwood

Optimal controller tuning for a nonlinear moored wave energy converter via non-parametric frequency-domain techniques
B. Paduano, F. Carapellese, E. Pasta, N. Faedo & G. Mattiazzo

On optimization-based strategies in data-driven control of wave energy systems
E. Pasta, G. Papini, N. Faedo, G. Mattiazzo & J.V. Ringwood

14h00 – 15h30
Session 2.6
Wind Energy - Construction
Room: 02.2
Chairs: F. Adam & J. Gaspar

GICON® TLP of the fourth generation – Optimized design for series production
R. Kaden, M. Lutz, F. Adam & J. Großmann

Floating offshore wind turbine – Heavy construction requirements
A.P. Crowle & P.R. Thies

Evaluation of shipyard selection criteria for floating wind developers
H. Díaz & C. Guedes Soares

Study of supply chain for floating offshore wind turbine using network optimization
Y. Adachi & K. Takagi

14h00 – 15h30
Session 3.6
Tidal Energy 3
Room: 02.3
Chairs: G. Germain & G. Pinon

Computational fluid dynamics modelling of tidal turbine arrays in a demonstration site
C. Badoe, X. Li, A. Williams & I. Masters

Analysis of the wake of a wide bottom-mounted obstacle in presence of surface wave following tidal current
M. Magnier, B. Gaurier, G. Germain & P. Druault

Investigating the effect of the sediment transport on tidal turbine array performance
C. Zhang, A. Angeloudis, S.C. Kramer, J.S. Zhang & M.D. Piggott

16h00 – 17h30
Session 1.7
Wave Energy - Hydrodynamics
Room: 02.1
Chairs: H. Bihs & S. Wang

Investigation into embedded focused wave group suitability for the assessment of extreme hydrodynamics loads on point-absorber WECs
B. Tagliafierro, M. Göteman, J. Engström, I. Martínez-Estévez, J.M. Domínguez, A.J.C. Crespo, M. Gómez-Gesteira & C. Altomare

Simulation of solitary waves and its interaction with fixed floating pontoon
H. Islam, T.S. Hallak & C. Guedes Soares

A comparative study on BEM solvers for wave energy converters
V. Raghavan, G. Lavidas, A.V. Metrikine, N. Mantadakis & E. Loukogeorgaki

A direct forcing immersed boundary method for simulating floating objects
A. Soydan, W. Wang, A. Kamath & H. Bihs

16h00 – 17h30
Session 2.7
Wind Energy - Farms
Room: 02.2
Chairs: L. Johanning & E. Uzunoglu

Faulty wind farm simulation: An estimation/control-oriented model
Y. Peña-Sanchez, M. Penalba & V. Nava

High-efficiency wind-farm-scale wave force estimation for preliminary design of offshore wind installations
W. Wang, A. Kamath, H. Bihs & C. Pákozdi

Sensitivity of wind farm wake steering strategies to analytical wake models
F. Gori, A. Wynn & S. Laizet

A case study: Wind farm layout optimization, Shimane, Japan
H. Falahaty & T. Kurata

16h00 – 17h30
Session 3.7
Solar Energy
Room: 02.3
Chairs: A. Souto-Iglesias & A. Abbasnia

Structural assessment of a pontoon-type floating photovoltaic plant for the marine environment
R. Claus, F. Soto, A. Cebada & M. López

Development of a CFD model for simulating a floating solar platform in irregular wave regimes
G. Baruah, M. Karimirad, D. Friel, P. Mackinnon, A. Abbasnia & N. Sarmah

A 3D BEM-CMS scheme for the hydrodynamic analysis of floating structures supporting PV systems in general seabed topography
A. Magkouris & K. Belibassakis

Design and model test of a soft-connected lattice-structured floating solar photovoltaic concept (RECsolar) for harsh offshore conditions (ORAL PRESENTATION)
ZY. Jiang, J. Dai, S. Saettone, G. Tørå, Z. He, M. Bashir & A. Souto-Iglesias

Thursday, 10 November 2022

09h00 – 10h30
Session 1.8
Renewable Energy Devices 1
Room: 02.1
Chairs: L. Johanning & S. Saeidtehrani

Development of a 400 MW AC/DC converter platform on a TLP sub-structure
M. Lutz, F. Adam & J. Großmann

Study on leakage risk assessment of LNG offshore transfer and delivery system
Z. Kang, Z. Li, J. Kang & F. Zhang

Assessment of the thermal effect of biofouling on the submarine dynamic cable of floating offshore wind turbines
Z. Maksassi, B. Garnier, A. Ould El Moctar & F. Schoefs

Offshore Power Cables - Experience with failure and risk mitigation (ORAL PRESENTATION)
H.J.R. Pinto

09h00 – 10h30
Session 2.8
ArcWIND 1
Room: 02.2
Chairs: C. Guedes Soares

New Insights in the Spatial and Temporal Wind Variability from ARCWIND Wind Atlas
N. Rascle

Mooring installation and logistics for the construction of the wind farm arrays
J. Altuzarra

A software tool for the economics of offshore wind
D. Cordal Iglesias, P. Rubial-Yáñez, A. Filgueira-Vizoso & L. Castro-Santos

Hybrid wave tank testing of a 10MW semi-submersible floating wind turbine compared with computations
J. Azcona, O. Pires, F. Vittori, I. Eguinoa, A. Rodríguez, Á. Morató, C. Garrido & C. Desmond

09h00 – 10h30

Session 3.8

Materials and Structural Design 1

Room: 02.3

Chairs: Y. Garbatov & B.Q. Chen

Structural analysis of low pressure steam turbine rotor for Open Cycle Ocean Thermal Energy Conversion (OC-OTEC) based desalination plant
A. Majumdar, A. Mani & P. Jalihal

Establishing confidence in predictions of fatigue loading for floating tidal turbines based on large-eddy simulations and unsteady blade element momentum
P. Ouro, H. Mullings & T. Stallard

Fatigue analysis of a point-absorber wave energy converter based on augmented data from a WEC-Sim model calibrated with experimental data
Z. Shahroozi, M. Göteman & J. Engström

Development of a simplified blade root fatigue analysis for floating offshore wind turbines
M. Sirigu, E. Faraggiana, A. Ghigo, E. Petracca, G. Mattiazzo & G. Bracco

11h00 – 12h30

Session 1.9

Renewable Energy Devices 2

Room: 02.1

Chairs: L. Chatellier & F. Arena

Study on impulse turbine for bi-directional airflow with asymmetric cascade
K. Kanetsuki, M. Takao, Y. Ito, S. Okuhara, M.M. Ashraful Alam, Y. Kinoue & T. Setoguchi

System model development and numerical simulation of low-head pumped hydro storage
J.P. Hoffstaedt, A. Jarquín-Laguna, J. Fahlbeck & H. Nilsson

Numerical analysis of counter-rotating impulse turbine for wave energy conversion
T. Ogawa, M. Takao, S. Okuhara, S. Sasaki, M.M. Ashraful Alam & Y. Kinoue

Technical potential for sea water air conditioning (SWAC) in the Channel Area
(ORAL PRESENTATION)
A. Zawalna-Geer, P.P. Menon, B. Garnier, L. Johanning & J-I. Pradillon

11h00 – 12h30

Session 2.9

ArcWIND 2

Room: 02.2

Chairs: A. Souto-Iglesias

10 MW advance Spar Telwind evolutions for the Atlantic area conditions
J. Urbano Orellana, B. Garcia & A. Ortega

SATH platform adapted to 10MW+ wind turbines
A. Cortina

Design of a gravity mooring concept for the CENTEC TLP
E. Uzunoglu & C. Guedes Soares

W2Power, twin turbine solution for the European waters
J.E. Hanssen, J. Fernandez & P. Mayorga

11h00 – 12h30

Session 3.9

Materials and Structural Design 2

Room: 02.3

Chairs: J.W. Ringsberg & S. Wang

Analysis of slamming loads on a sandwich composite wedge
M. Calvário, S. Wang & C. Guedes Soares

Hydroelastic response of a moored floating flexible offshore structure based on Timoshenko-Mindlin-Beam theory
P. Amouzadrad, S.C. Mohapatra & C. Guedes Soares

Prediction of vortex-induced vibration effects on a subsea gravity energy storage module
A.R. Novgorodcev & A. Jarquín-Laguna

Structural behaviour of hydrogen flexible pipe under internal pressure
J.X. Zhang, C. An, D.F. Wei, B.Q. Chen & C. Guedes Soares

14h00 – 15h30
Session 1.10
Multiuse Platforms
Room: 02.1
Chairs: L. Cappietti & S. Mohapatra

A general computing platform for offshore renewable energy systems (OREGEN)
G.Q. Li & P. Stansby

Field experimental campaign on a multi-purpose floating structure: Set-up description
C. Ruzzo, V. Fiamma, A. Scialò, F. Arena, A. Santoro, S. Muggiasca, F. Taruffi, S. Di Carlo, I. Larrea, P.A. Corvaglia, A. Zuccarino & F. Lagasco

Multi-use platforms at sea: A sustainable solution for aquaculture and biodiversity
J. Demmer, M. Lewis & S. Neill

Development of a hybrid oscillating water column-overtopping device: Preliminary results of laboratory tests at scale 1:25 on the O2WC WEC
I. Simonetti, A. Esposito & L. Cappietti

14h00 – 15h30
Session 2.10
ArcWIND 3
Room: 02.2
Chairs: J. Wang

Failure identification and critical failure prevention of floating offshore wind turbines
H. Li & C. Guedes Soares

Scheduling operations of vessels to support maintenance of wind farms
L.M. Silva & C. Guedes Soares

Development on intelligent prognostic health management framework with uncertainty quantification for floating wind turbine maintenance
M. Bashir & J. Wang

Availability analysis of an offshore wind turbine subjected to age-based preventive maintenance by Petri Nets
E. Lotovskyi, A.P. Teixeira & C. Guedes Soares

14h00 – 15h30
Session 3.10
Maintenance Planning
Room: 02.3
Chairs: A.P. Teixeira & J. Sobral

Efficient techniques for fast uncertainty propagation in an offshore wind turbine multi-physics simulation tool
E. Fekhari, B. Iooss, V. Chabridon & J. Muré

Impact of accessibility on O&M of floating offshore wind turbines: Sensitivity of the deployment site
M. Centeno-Telleria, J.I. Aizpurua & M. Penalba

On building physics-based AI models for the design and SHM of mooring systems
V. Nava, A. Aristondo, V. Varo, M. Esteras, I. Touzon, F. Boto, I. Mendikoa, P. Ruiz-Minguela, S. Gil-Lopez, N. Gorostidi & D. Pardo

Application of Reliability Centered Maintenance to wind turbines
J. Sobral, G. Maia & C. Guedes Soares

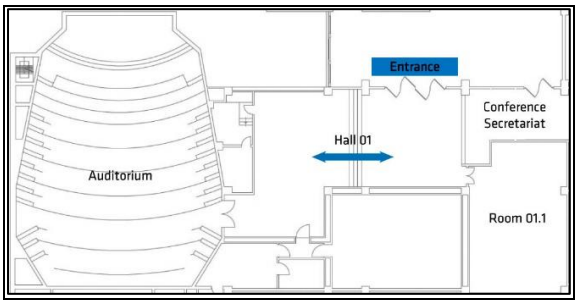
IMPORTANT INFORMATION:

- The technical sessions of the RENEW 2022 Congress **will run in IST's Congress Centre** located at the Alameda Campus, on the Lower Ground Level 01 and Level 02 of the Civil Engineering Building.
  It is foreseen that all the RENEW 2022 technical sessions will be transmitted online via the ZOOM system.

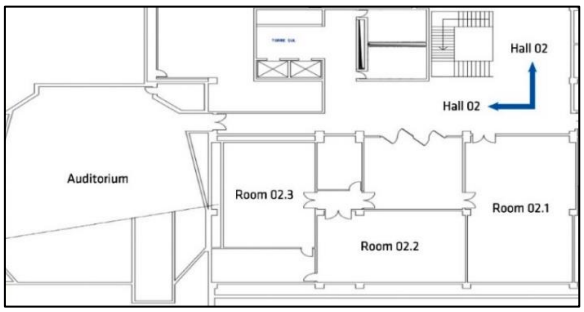
- The timetable is settled taking into consideration the **Time Zone Lisbon/London time**

- The **use of facemasks** is discretionary throughout the Congress and IST's campus.

IST's Congress Centre

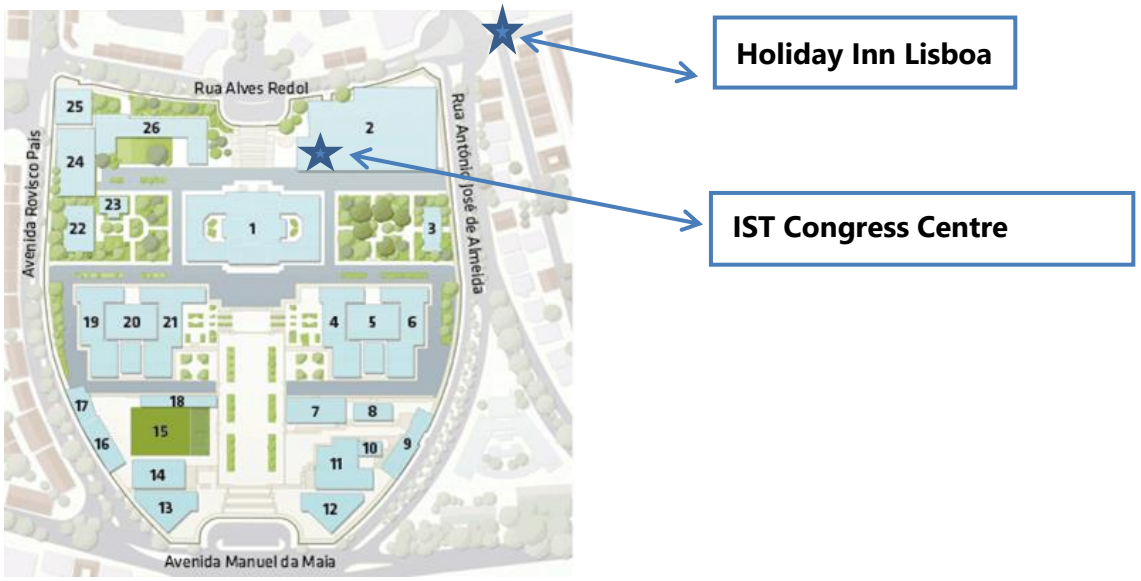


Lower Ground Level 01



Lower Ground Level 02

The MAP below shows the location of the IST's Congress Centre in the Campus, and the location of the **Hotel Holiday Inn Lisboa** where lunches will be served for the registered participants with lunch tickets.



Guidelines for presentations, questions and answers

- Each paper will have a timeslot of 20 minutes (15 minutes for the presentation and 5 minutes for Questions & Answers).
- If you intend participating online using the ZOOM systems, you are advised to test all technology before the conference.
- Make sure you follow the timetable set out in the programme and the order of presentations.

Additional information:

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Account name: **RENEW2022**

Password: **5hYpqb**

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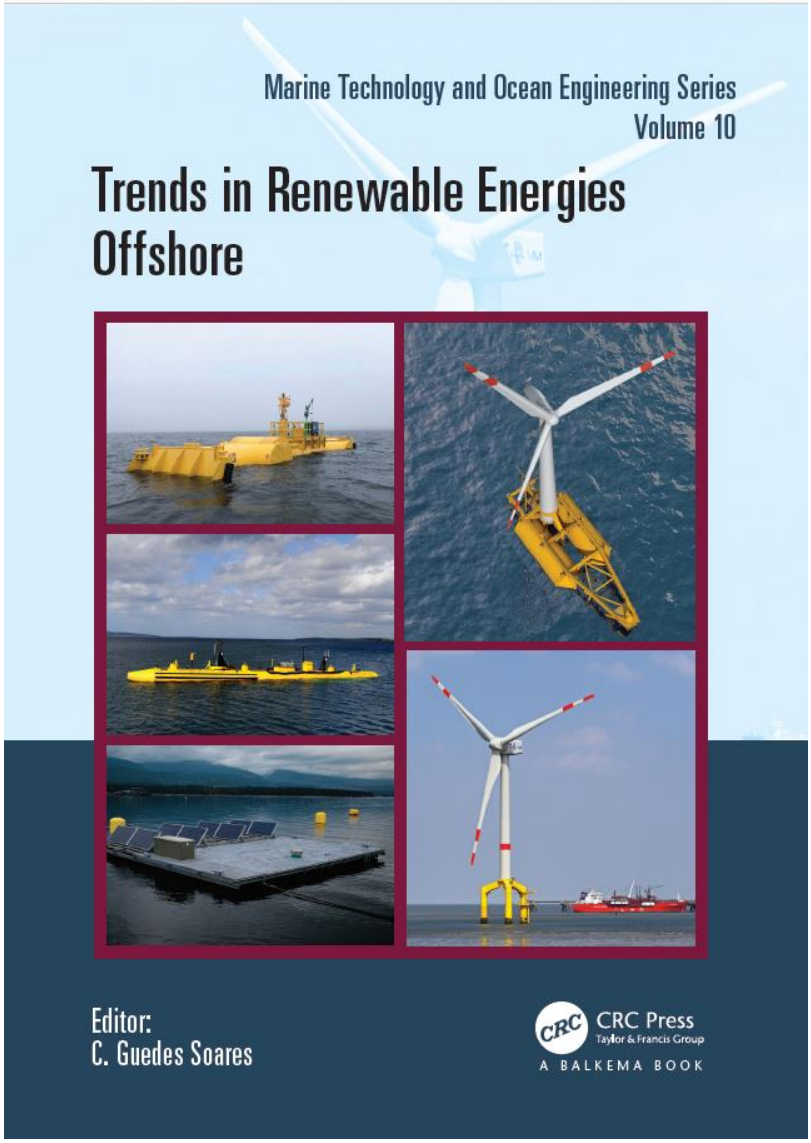

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